

CLAIMS

I claim:

1. A fuel pump module comprising:
 - 5 a reservoir configured to hold a supply of fuel, the reservoir including a fuel passageway and defining a first seat on a first side of the fuel passageway and a second seat on a second side of the fuel passageway;
 - a seal configured to be seated on the first and second seats to substantially seal the fuel passageway; and
 - 10 a weight biasing the seal toward the first and second seats by contacting the seal only at a location between the first and second seats.
2. The fuel pump module of claim 1, wherein the first seat and the second seat are substantially annular.
- 15 3. The fuel pump module of claim 2, wherein the first seat and the second seat are concentric.
4. The fuel pump module of claim 1, wherein the seal is a substantially flat,
20 annular disk made from a resilient material.
5. The fuel pump module of claim 1, wherein the weight includes a substantially convex surface at least partially in contact with the seal.

6. The fuel pump module of claim 5, wherein the substantially convex surface defines a convex slope angle of at least about 3°.
7. The fuel pump module of claim 5, wherein the substantially convex surface defines a convex slope angle of no more than about 4°.
8. The fuel pump module of claim 5, wherein the substantially convex surface defines a convex slope angle in a range of about 2° to about 5°.
9. The fuel pump module of claim 1, wherein the weight is substantially annular.
10. The fuel pump module of claim 1, wherein the weight is configured to provide a gap between a lower surface of the weight and an upper surface of the seal.
11. The fuel pump module of claim 10, wherein the gap includes a first gap located adjacent the first seat and a second gap located adjacent the second seat.
12. The fuel pump module of claim 10, wherein the gap between the lower surface of the weight and the upper surface of the seal is at least 0.01 mm at a location adjacent at least one of the first and second seats.

13. The fuel pump module of claim 1, wherein the weight deflects the seal in an area between the first and second seats to ensure that the seal contacts both the first and second seats to substantially seal the fuel passageway.

14. A fuel pump module, comprising:

a reservoir configured to hold a supply of fuel, the reservoir including a fuel passageway and defining a first seat on a first side of the fuel passageway and a second seat on a second side of the fuel passageway;

5 a seal configured to be at least partially seated on the first and second seats to substantially seal the fuel passageway; and

a weight biasing the seal toward the first and second seats, the weight being configured to provide a gap between a lower surface of the weight and an upper surface of the seal.

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15. The fuel pump module of claim 14, wherein the weight is configured to contact the seal only at a location between the first and second seats.

16. The fuel pump module of claim 14, wherein the first seat and the second
15 seat are substantially annular.

17. The fuel pump module of claim 16, wherein the first seat and the second seat are concentric.

20 18. The fuel pump module of claim 14, wherein the seal is a substantially flat, annular disk made from a resilient material.

19. The fuel pump module of claim 14, wherein the weight includes a substantially convex surface at least partially in contact with the seal.

20. The fuel pump module of claim 19, wherein the substantially convex surface defines a convex slope angle of at least about 3°.
21. The fuel pump module of claim 19, wherein the substantially convex surface defines a convex slope angle of no more than about 4°.
22. The fuel pump module of claim 19, wherein the substantially convex surface defines a convex slope angle in a range of about 2° to about 5°.
23. The fuel pump module of claim 14, wherein the weight is substantially annular.
24. The fuel pump module of claim 14, wherein the gap includes a first gap located adjacent the first seat and a second gap located adjacent the second seat.
25. The fuel pump module of claim 14, wherein the gap between the lower surface of the weight and the upper surface of the seal is at least 0.01 mm at a location adjacent at least one of the first and second seats.
26. The fuel pump module of claim 14, wherein the weight deflects the seal in an area between the first and second seats to ensure that the seal contacts both the first and second seats to substantially seal the fuel passageway.

27. A method for maintaining fuel within a fuel pump module, the method comprising:

providing a reservoir having a fuel passageway and defining a first seat on a first side of the fuel passageway and a second seat on a second side of the fuel passageway; and

biasing a seal toward the first and second seats to substantially seal the fuel passageway even when the first and second seats are not properly aligned.

28. The method of claim 27, wherein biasing the seal toward the first and second seats includes positioning a weight on the seal, the weight being configured to provide a gap between a lower surface of the weight and an upper surface of the seal.

29. The method of claim 28, wherein providing a gap includes providing a first gap adjacent the first seat and providing a second gap adjacent the second seat.

30. The method of claim 28, further comprising allowing fuel to enter the gap to bias the seal toward the first and second seats.

31. The method of claim 27, further comprising deflecting the seal in an area between the first and second seats to ensure contact between the seal and the first seat, and the seal and the second seat.

32. A method for maintaining fuel within a fuel pump module, the method comprising:

providing a reservoir having a fuel passageway, the reservoir defining a first seat on a first side of the fuel passageway and a second seat on a second side
5 of the fuel passageway;

biasing a seal toward the first and second seats using a weight;

providing a gap between a lower surface of the weight and an upper surface of the seal; and

substantially sealing the fuel passageway by seating the seal upon the first
10 and second seats.

33. The method of claim 32, further comprising applying the weight entirely to a portion of the seal between the first seat and the second seat.

15 34. The method of claim 32, wherein providing a gap includes providing a first gap adjacent the first seat and providing a second gap adjacent the second seat.

20 35. The method of claim 32, further comprising allowing fuel to enter the gap to bias the seal toward the first and second seats.

36. The method of claim 32, further comprising deflecting the seal in an area between the first and second seats with the weight to ensure contact between the seal and the first seat, and the seal and the second seat.